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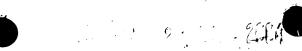
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(54) Title: SPHERICAL PELLET CONTAINING A WATER-SOLUBLE ACTIVE INGREDIENT

(57) Abstract: A process for preparing spherical pellets comprising (a) a water-soluble active ingredient soluble, freely soluble or very soluble in water; and in particular having a water-solubility of ≥ 0.5 g/ml; (b) a spheronizing agent; (c) a dry lubricant, said method comprising preparing a mixture of the active ingredient, the spheronising agent, the dry lubricant; and an amount of water which is less than 5%, w/w relative to the total weight of the mixture; extruding said mixture to obtain an extrudate; and spheronising the extrudate to form spherical pellets. The invention further concerns pellets obtained by this process and sustained release oral dosage forms containing said pellets.





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B. FIELDS SEARCHED

 $\label{lem:lem:model} \begin{tabular}{ll} Mhimum documentation searched (classification system followed by classification symbols) \\ IPC \ 7 \ A61K \end{tabular}$

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, BIOSIS, PAJ

	ENTS CONSIDERED TO BE RELEVANT	
Category ^o	Citation of document, with indication, where appropriate, of the relevant passages	 Relevant to claim No.
X	WO 01/074329 A (SQUIBB BRISTOL MYERS CO) 11 October 2001 (2001-10-11) * Ex. 1-2; claim 1-34 *	3-5,7, 9-12
Y	the whole document	1,2,6,8
X	EP 1 020 181 A (GRUENENTHAL GMBH) 19 July 2000 (2000-07-19) * '0005!-'0023!; Beispiele 1-4; claims 1-7 *	3,4,7-12
Y	the whole document	1,2,6,8
Α	EP 0 624 366 A (EURO CELTIQUE SA) 17 November 1994 (1994-11-17) cited in the application * p.1, 1.1-21; Tables 1-5; p.4, 1.35-39; p.4, 1.49-p.5, 1.3; p.5, 1.9-43; claims 13-15 *	1-12
	-/	

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Special categories of cited documents: 'A' document defining the general state of the art which is not considered to be of particular relevance 'E' earlier document but published on or after the International filling date 'L' document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) 'O' document referring to an oral disclosure, use, exhibition or other means 'P' document published prior to the international filing date but later than the priority date claimed	 "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. "&" document member of the same patent family
Date of the actual completion of the international search	Date of mailing of the International search report
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Internation Application No
PCT/EP 03/06831

		PCT/EP 03	/06831	
C(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT				
Category °	Citation of document, with indication, where appropriate, of the relevant passages		Relevant to claim No.	
A	WO 95/28147 A (BASF AG ; GRABOWSKI SVEN (DE); ROSENBERG JOERG (DE); SANNER AXEL (D) 26 October 1995 (1995-10-26) * p.5, 1.25-p.6, 1.37; p.7, 1.14; claims 1-8 *		1-12	
A	EP 0 729 751 A (EURO CELTIQUE SA) 4 September 1996 (1996-09-04) * ex. 1-8; claims 1-15 *		1-12	
Ρ,Χ	WO 02/066026 A (BARTHOLOMAEUS JOHANNES; FRIDERICHS ELMAR (DE); GRUENENTHAL GMBH (DE)) 29 August 2002 (2002-08-29) * Beispiele 1,2; claims 1-33 *		3,4,7-12	
	-			

INTERNATIONAL SEARCH REPORT

Information on patent family members

Internal Application No PCT/EP 03/06831 Ξ,

				03/00831
Patent document cited in search report	Publication date		Patent family member(s)	Publication date
WO 0174329 A	11-10-2001	AU BG CA CN CZ EP HU JP LT NO SK WO US	4959101 A 107157 A 2404687 A1 1420774 T 20023003 A3 1267879 A2 0302631 A2 2003528905 T 2002099 A ,B 20024645 A 12822002 A3 0174329 A2 2002002147 A1	15-10-2001 30-06-2003 11-10-2001 28-05-2003 13-11-2002 02-01-2003 28-11-2003 30-09-2003 25-04-2003 27-09-2002 04-02-2003 11-10-2001 03-01-2002
EP 1020181 A	19-07-2000	DE AU CN CZ EP HU JP NZ PL SK US ZA	19901692 A1 764280 B2 1270025 A 20000167 A3 1020181 A1 0000141 A2 2000212068 A 502264 A 337864 A1 682000 A3 6558704 B1 200000169 A	20-07-2000 14-08-2003 18-10-2000 13-09-2000 19-07-2000 28-12-2000 02-08-2000 30-11-2001 31-07-2000 14-08-2000 06-05-2003 07-08-2000
EP 0624366 A	17-11-1994	DEB GAT AUUAN CCCD DE DE EKKGPPPSSIIRRU	4315525 A1 2284760 A 2287880 A 3413 U2 138566 T 201989 T 3995797 A 6196394 A 2123160 A1 1099262 A ,B 9401093 A3 9422335 U1 69400215 D1 69400215 T2 69427472 D1 69427472 T2 699436 T1 729751 T1 624366 T3 699436 T3 20577 A 0624366 A1 0699436 A1 0729751 A1 2088312 T3 2159591 T3 942092 A 20030560 A 3020084 T3 3036565 T3 75703 A2	17-11-1994 21-06-1995 04-10-1995 27-03-2000 15-06-1996 15-06-2001 18-12-1997 17-11-1994 11-11-1994 01-03-1995 16-11-1996 31-10-1996 31-10-1996 19-07-2001 08-11-2001 10-04-1997 13-03-1997 01-07-1996 23-07-2001 30-08-1999 17-11-1994 06-03-1996 04-09-1996 01-08-1996 16-10-2001 11-11-1994 14-04-2003





Information on patent family members

Internal Application No
PCT/EP 03/06831

				101/11	03/ 00031
Patent document dited in search report		Publication date		Patent family member(s)	Publication date
EP 0624366	Α		ID	25988 A	10-11-1994
p. 0021000	••		ΙL	109460 A	10-03-1998
			IL	119660 A	12-09-2002
			IN	182370 A1	27-03-1999
			IN	182556 A1	01-05-1999
•			JP	3045924 B2	29-05-2000
			JΡ	7053361 A	28-02-1995
			ĴΡ	3267561 B2	18-03-2002
			JP	11124327 A	11-05-1999
			ĴΡ	3443574 B2	02-09-2003
			ĴΡ	2002154954 A	28-05-2002
			NO	941719 A	11-11-1994
			NO	993484 A	11-11-1994
			NO	20013566 A	11-11-1994
			NZ	260408 A	28-05-1996
			PL	176474 B1	30-06-1999
			PT	699436 T	30-10-2001
			SG	67347 A1	21-09-1999
			SK	54194 A3	07-12-1994
				24134 M2	0/-12-1994
WO 9528147	Α	26-10-1995	DE	4413350 A1	19-10-1995
			ΑT	204747 T	15-09-2001
			ΑU	2256495 A	10-11-1995
			BR	9507328 A	30-09-1997
			CA	2188185 A1	26-10-1995
			CN	1147764 A ,B	16-04-1997
•			CZ	9603013 A3	12-03-1997
		•	DE	59509563 D1	04-10-2001
			DK	756480 T3	08-10-2001
			WO	9528147 A1	26-10-1995
			EΡ	0756480 A1	05-02-1997
			ES	2162635 T3	01-01-2002
			FΙ	964175 A	16-12-1996
			HU	75161 A2	28-04-1997
			ΙL	113316 A	31-12-1999
			JΡ	9511992 T	02-12-1997
			NO	964410 A	17-12-1996
			NZ	284064 A	25-03-1998
			PL	317936 A1	28-04-1997
			PT	756480 T	28-02-2002
			ŔŮ	2155031 C2	27-08-2000
			ÜS	6290990 B1	18-09-2001
EP 0729751	A	04-09-1996	DE	4315525 A1	17-11-1994
,,	• •		GB	2284760 A	21-06-1995
			GB	2287880 A	04-10-1995
			ĀT	3413 U2	27-03-2000
			ΑŤ	138566 T	15-06-1996
			ΑŤ	201989 T	15-06-2001
			ΑÙ	3995797 A	18-12-1997
			AU	6196394 A	17-11-1994
			CA	2123160 A1	11-11-1994
			CN	1099262 A ,B	01-03-1995
			UN		
			<u></u> ዮን	ዕለሀነሀ ወሪ የሪ	
			CZ	9401093 A3	16-11-1994
			DE	9422335 U1	13-04-2000
			DE DE	9422335 U1 69400215 D1	13-04-2000 04-07-1996
			DE	9422335 U1	13-04-2000



INT NATIONAL SEARCH REPORT

Information on patent family members

Internation No PCT/EP 03/06831

Patent document cited in search report	Publication date		Patent family member(s)	Publication date
EP 0729751	Α	DE	69427472 Ta	2 08-11-2001
		DE	699436 T	
		DE	729751 T	
		DK	624366 T	
		DK	699436 T	
		EG	20577 A	30-08-1999
		EP	0624366 A	
		EP	0699436 A	
_		ĒΡ	0729751 A	
-	•	ËS	2088312 T	
		ËŠ	2159591 T	
		FΙ	942092 A	11-11-1994
		FΙ	20030560 A	14-04-2003
		GR	3020084 T	
		GR	3036565 T	
		ΗÙ	75703 A	
		ID	25988 A	10-11-1994
		ĪĹ	109460 A	10-03-1998
		ĪĹ	119660 A	12-09-2002
		ĪN	182370 A	
		IN	182556 A	
		ĴΡ	3045924 B	
		JP	7053361 A	28-02-1995
•		JP	3267561 B	
		JP	11124327 A	11-05-1999
		JP	3443574 B	
		JP	2002154954 A	28-05-2002
		NO	941719 A	11-11-1994
		NO	993484 A	11-11-1994
		NO	20013566 A	11-11-1994
		NZ	260408 A	28-05-1996
		PL	176474 B	
		ΡŢ	699436 T	30-10-2001
		SG	67347 A	
		SK	54194 A	
				0, 12 1331
WO 02066026	A 29-08-2002		10108122 A	
		CA	2437242 A	
		WO	02066026 A	
		EP	1372624 A	
		HU	0303163 A	2 29-12-2003